

# **CAPACITIES AND SPECIFICATIONS**

**B60Z [A230];  
W60Z [A231];  
W65Z [A229];  
B80Z [A233];  
W80Z [A234]**

# ***HYSTER***

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This section is for the following models:

B60Z [A230];  
 W60Z [A231];  
 W65Z [A229];  
 B80Z [A233];  
 W80Z [A234]

(More Content includes: Brake system, Capacities, and specifications, Frame, Hydraulic, System, Industrial battery, Main control, Valve, Mast repair, Fasteners, Schematics diagrams, Steering axle, Steering system, Wire harness repair And more)

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## Hydraulic System

Unit	Battery Compartment	Volts	Operating Pressure <sup>1</sup>		Ampere Draw <sup>2</sup>		Relief Setting		Lift Time (sec)		Lower Time (sec)	
			No Load	Rated Load	No Load	Rated Load	Pressure <sup>3</sup>	Amp Draw	No Load	Rated Load	No Load	Rated Load
<b>W60Z</b>	340 mm (13.4 in.)	24	2.94 MPa (426 psi)	11.03 MPa (1600 psi)	34	81	16.62 MPa (2700 psi)	124	3.7	4.7	3.0	1.8
<b>B60Z</b>	340 mm (13.4 in.)	24	2.94 MPa (426 psi)	11.03 MPa (1600 psi)	34	81	18.62 MPa (2700 psi)	124	3.7	4.7	3.0	1.8
<b>W65Z</b>	229 mm (9.0 in.)	12	(359)	(1750)	93	194	(2850)	270	3.75	5.7	7.8	4.24
<b>W80Z</b>	340 mm (13.4 in.)	24	(401)	(2173)	45	108	(3500)	147	3.7	5.4	5.9	3.2
<b>B80Z</b>	340 mm (13.4 in.)	24	(401)	(2173)	45	108	(3500)	147	3.7	5.4	5.9	3.2
<b>W60Z and B60Z – Standard Specifications</b> Hydraulic Tank Capacity – 1.0 liter (1.06 qt) Pump Displacement (24 Volts) – 1.59 cm <sup>3</sup> /rev (0.092 in. <sup>3</sup> /rev) Creep Rate – 6.4 mm (0.25 in.) Maximum In 10 Minutes @ 32°C (90°F) Oil Temperature												
<b>W65Z, W80Z, and B80Z – Standard Specifications</b> Hydraulic Tank Capacity – 1.0 liter (1.06 qt) W80Z and B80Z Pump Displacement (24 Volts) – 2.0 cm <sup>3</sup> /rev (0.122 in. <sup>3</sup> /rev) W65Z Pump Displacement (12 Volts) – 2.0 cm <sup>3</sup> /rev (0.122 in. <sup>3</sup> /rev) Creep Rate – 6.4 mm (0.25 in.) Maximum In 10 Minutes @ 32°C (90°F) Oil Temperature												
<b>Footnotes</b> <sup>1</sup> ±0.35 MPa (±51 psi) @ 21°C (70°F) Oil Temperature <sup>2</sup> ±10 Amps @ 1.270 Battery Specific Gravity <sup>3</sup> +0.6 to 0.0 MPa (+87 to 0 psi) @ 32°C (90°F) Oil Temperature Full Flow												

## Hydraulic Oils

Operating Condition	Standard	CS/Freezer/Food Processing	Arctic
<b>For All Hydraulically Actuated Equipment</b>			
<b>Specification</b>	ISO VG 46 Antiwear (HCE-140)	Exxon Univis® HVI 26	Exxon Univis® HVI 26
<b>Temperature Range</b>	32 to –120°C (89.6 to –184.0°F)	0 to –120°C (32.0 to –184.0°F)	–40 to –120°C (40.0 to –184.0°F)
<b>Pour Point Maximum</b>	–15°C (5.0°F)	–60°C (–76.0°F)	–60°C (–76.0°F)
<b>Field Personnel Note:</b> The product listed above is the approved source that meets or exceeds <b>HYSTER</b> specifications. The use of products other than that listed above is unauthorized.			

## Gear Oils

Operating Condition	Standard/CS/Freezer/Food Processing	Arctic
SAE Grade	80W-90	75W-90
Type	Multipurpose EP	Multipurpose EP
Base Oil	Conventional Petroleum	Synthetic
MIL-Specification No.	MIL-L-2105C	MIL-L-2105C
API Service Classification	GL-5	GL-5
Anticipated Ambient Temperature	-26 to +38°C (-15 to +100°F) Most <b>HYSTER</b> lift truck operations will fall within this temperature range.	As low as -51°C (-60°F) Primarily intended for cold storage and/or Arctic conditions; can be used as high as +32°C (+90°F).
<b>Approved Sources</b>		
<b>Chevron</b>	Chevron Universal Gear Lube 80W/90	No Product
<b>Exxon</b>	Exxon Gear Oil GX 80W/90	No Product
<b>Mobil</b>	Mobilube HD 80W/90	Mobilube SHC 75W/90
<b>Pennzoil</b>	Pennzoil MP 4092	No Product
<b>Phillips 66</b>	Philube SMP Gear Oil 80W/90	No Product
<b>Solene Lub. Inc.</b>	Solene Gear Oil #905	No Product
<b>Sun</b>	Sunfleet GL-5 Gear Lube 80W/90	No Product
<b>Union 76</b>	Unocal MP Gear Lube LS 80W/90	No Product
<b>Field Personnel Note:</b> The products listed above are the approved sources that meet or exceed <b>HYSTER</b> specifications. The use of products other than that listed above is unauthorized.		

## Grease

Fittings and Bearings			
Application	Standard/CS/Freezer	Arctic/Food Processing	Steer Bearings
Approved Vendor	Mobilgrease® 28	Amsoil GHD®	Amsoil GHD®
Oil	Synthetic	Synthetic	Synthetic
Thickener	Clay	Lithium Complex	Lithium Complex
Grade NGLI	1.5	2.0	2.0
<b>Field Personnel Note:</b> The product listed above is the approved source that meets or exceeds <b>HYSTER</b> specifications. The use of products other than that listed above is unauthorized.			

Fittings and Bearings			
Application	Standard/CS/Freezer	Arctic/Food Processing	Steer Bearings
Moly-Fortified	No	Yes	Yes
Dropping Pt.	310°C (590°F)	288°C (550°F)	288°C (550°F)
<b>Field Personnel Note:</b> The product listed above is the approved source that meets or exceeds <b>HYSTER</b> specifications. The use of products other than that listed above is unauthorized.			

## Truck Weights

### WEIGHT (BASIC TRUCK WITHOUT BATTERY)

Unit	Battery Compartment	Fork Length 1067 mm (36 in.) Weight	Fork Length 1219 mm (42 in.) Weight	Fork Length 2134 mm (48 in.) Weight	Fork Length 2438 mm (54 in.) Weight	Fork Length 2438 mm (60 in.) Weight
<b>W60Z</b>	340 mm (13.4 in.)	448 kg (987 lb)	457 kg (1007 lb)	464 kg (1022 lb)	470 kg (1037 lb)	477 kg (1052 lb)
<b>B60Z</b>	340 mm (13.4 in.)	596 kg (1310 lb)	605 kg (1333 lb)	612 kg (1348 lb)	620 kg (1367 lb)	625 kg (1378 lb)
<b>W65Z</b>	229 mm (9.0 in.)	433 kg (954 lb)	445 kg (981 lb)	457 kg (1008 lb)	470 kg (1035 lb)	482 kg (1062 lb)
<b>W80Z</b>	340 mm (13.4 in.)	456 kg (1006 lb)	469 kg (1033 lb)	481 kg (1060 lb)	493 kg (1087 lb)	505 kg (1114 lb)
<b>B80Z</b>	340 mm (13.4 in.)	615 kg (1356 lb)	627 kg (1383 lb)	640 kg (1410 lb)	652 kg (1437 lb)	664 kg (1464 lb)

Unit	Battery Compartment	Fork Length 2134 mm (84 in.) Weight	Fork Length 2362 mm (93 in.) Weight	Fork Length 2438 mm (96 in.) Weight	Fork Length 3658 mm (114 in.) Weight
<b>B80Z</b>	340 mm (13.4 in.)	686 kg (1512 lb)	698 kg (1539 lb)	710 kg (1566 lb)	--

## Tires

Table 1. Drive Tire

Size	Item	Torque
10 × 5 × 6.5	Wheel Capscrew	200 N•m (148 lbf ft)
12 × 4.5 × 8	Wheel Lug Nut	195 N•m (144 lbf ft)

## Torque Specifications

### CASTER ASSEMBLY

**Mounting Capscrews (4 each)**  
57 N•m (42 lbf ft)

### MASTER DRIVE UNIT

**Motor Mount Studs (4 each)**  
17 N•m (13 lbf ft)

**Transmission to Frame Mounting Bolts (4 each)**  
B60Z, W60Z, W65Z, and W80Z  
201 N•m (148 lbf ft)  
B80Z 300 N•m (221 lbf ft)

**Drain Plug**  
41 N•m (30 lbf ft)

**Fill-Level Plug**  
27 N•m (20 lbf ft)

### STEERING

**Dash to Frame Mounting Bolts (4 each)**  
119 N•m (88 lbf ft)

**Steer Swivel to Dash Lock Nut (1 each)**  
27 N•m (20 lbf ft)

**Steer Handle to Tiller Bracket (2 each)**  
27 N•m (20 lbf ft)

**Butterfly Throttle Control to Handle (2 each)**  
1 N•m (0.5 lbf ft)

**Gas Springs Mounting Studs (2 each)**  
30 N•m (20 lbf ft)

**Control Arm Support Bracket Pivot Pins (2 each)**

142 ±7 N•m (105 ±5 lbf ft)

### BRAKE

**Mounting Capscrews**

B60Z, W60Z, W65Z, and W80Z 10 N•m (89 lbf in)  
B80Z 17 N•m (13 lbf ft)

### ELECTRICAL

**Traction Motor Power Wire Nuts (4 each)**

MPE060E and MPE080E 8 N•m (71 lbf in)  
All Others 9 N•m (80 lbf in)

**Steady-Rest to Frame - B60Z and B80Z (4 each)**  
88 N•m (65 lbf ft)

**Auxiliary Control Box - B60Z and B80Z (4 each)**  
9 N•m (7 lbf ft)

### LIFT MECHANISM

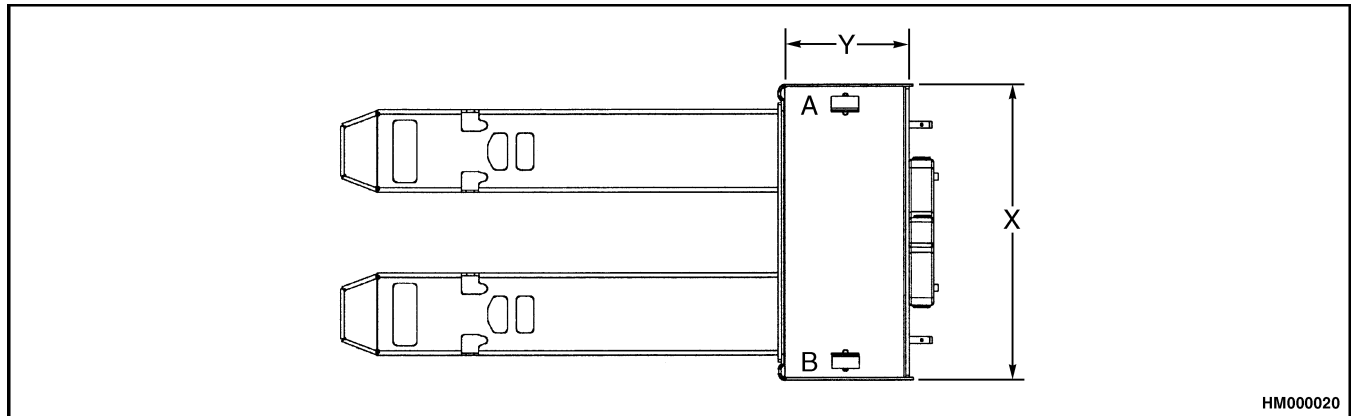
**Pull Rod Jam Nuts (4 each Rod)**  
176 N•m (130 lbf ft)

**Hydraulic Power Unit Mounting Capscrews (2 each)**

W60Z and B60Z 35 N•m (26 lbf ft)  
W65Z, W80Z and B80Z 69 N•m (51 lbf ft)

## Battery Specifications and Adjustments

Battery Compartment is shown in Figure 1.



*Figure 1. Battery Compartment*

### B60Z AND W60Z – 24 VOLT

Voltage	Ampere Hours (Max)	Kilowatt Hours (Max)	Compartment Length (X)	Compartment Width (Y) (Max)	Recommended Height (Max)	Weight (Max)
24	225	5.2	650.2 mm (25.6 in.) <sup>a</sup>	223.5 mm (8.8 in.)	591.8 mm (23.3 in.)	243.1 kg (536 lb)
24	255	6.0	650.2 mm (25.5 in.) <sup>a</sup>	218.4 mm (8.6 in.)	591.8 mm (23.3 in.)	267.6 kg (590 lb)
24	375	8.7	673.1 mm (26.5 in.) <sup>b</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	374.2 kg (825 lb)
24	425	9.9	673.1 mm (26.1 in.) <sup>b</sup>	325.1 mm (12.8 in.)	591.8 mm (23.3 in.)	392.3 kg (865 lb)
24	450	10.5	784.8 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	447.7 kg (987 lb)
24	510	11.9	784.8 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	469.5 kg (1035 lb)

**Note:** If Y is less than 327.6 mm (12.9 in.), A supplemental retainer is required.

a – Adjust both A and B retainers.

b – Adjust A and remove B retainer.

c – Remove both A and B retainer



**W65Z – 12 VOLT**

Voltage	Ampere Hours (Max)	Kilowatt Hours (Max)	Compartment Length (X)	Compartment Width (Y) (Max)	Recommended Height (Max)	Weight (Max)
12	255	2.5	477.5 mm (18.8 in.) <sup>a</sup>	172.7 mm (6.8 in.)	584.2 mm (23.0 in.)	138.3 kg (305 lb)
12	425	5.0	662.9 mm (26.1 in.)	195.6 mm (7.7 in.)	591.8 mm (23.3 in.)	197.7 kg (436 lb)
12	510	6.0	777.2 mm (30.6 in.) <sup>c</sup>	195.6 mm (7.7 in.)	591.8 mm (23.3 in.)	231.8 kg (511 lb)
12	750	8.8	777.2 mm (30.6 in.) <sup>c</sup>	195.6 mm (7.7 in.)	787.4 mm (31.0 in.)	322.1 kg (710 lb)
<p><b>Note:</b> If Y is less than 327.6 mm (12.9 in.), A supplemental retainer is required.                      a – Adjust both A and B retainers.                      b – Adjust A and remove B retainer.                      c – Remove both A and B retainer.</p>						

**B80Z – 24 VOLT**

Voltage	Ampere Hours (Max)	Kilowatt Hours (Max)	Compartment Length (X)	Compartment Width (Y) (Max)	Recommended Height (Max)	Weight (Max)
24	225	5.2	650.2 mm (25.6 in.) <sup>a</sup>	223.5 mm (8.8 in.)	591.8 mm (23.3 in.)	243.1 kg (536 lb)
24	255	6.0	650.2 mm (25.5 in.) <sup>a</sup>	218.4 mm (8.6 in.)	591.8 mm (23.3 in.)	267.6 kg (590 lb)
24	375	8.7	673.1 mm (26.5 in.) <sup>b</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	374.2 kg (825 lb)
24	425	9.9	673.1 mm (26.1 in.) <sup>b</sup>	325.1 mm (12.8 in.)	591.8 mm (23.3 in.)	392.3 kg (865 lb)
24	450	10.5	784.8 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	447.7 kg (987 lb)
24	510	11.9	784.8 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	469.5 kg (1035 lb)
24	600	14.0	784.8 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	591.8 mm (26.2 in.)	517.1 kg (1140 lb)
24	750	17.6	784.3 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	787.4 mm (31.0 in.)	657.7 kg (1450 lb)
<p><b>Note:</b> If Y is less than 327.6 mm (12.9 in.) A supplemental retainer is required.                      a – Adjust both A and B retainers.                      b – Adjust A and remove B retainer.                      c – Remove both A and B retainer.</p>						

## W80Z – 24 VOLT

Voltage	Ampere Hours (Max)	Kilowatt Hours (Max)	Compartment Length (X)	Compartment Width (Y) (Max)	Recommended Height (Max)	Weight (Max)
24	225	5.2	650.2 mm (25.6 in.) <sup>a</sup>	223.5 mm (8.8 in.)	591.8 mm (23.3 in.)	243.1 kg (536 lb)
24	255	6.0	650.2 mm (25.5 in.) <sup>a</sup>	218.4 mm (8.6 in.)	591.8 mm (23.3 in.)	267.6 kg (590 lb)
24	375	8.7	673.1 mm (26.5 in.) <sup>b</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	374.2 kg (825 lb)
24	425	9.9	673.1 mm (26.1 in.) <sup>b</sup>	325.1 mm (12.8 in.)	591.8 mm (23.3 in.)	392.3 kg (865 lb)
24	450	10.5	784.8 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	447.7 kg (987 lb)
24	510	11.9	784.8 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	469.5 kg (1035 lb)
24	600	14.0	784.8 mm (30.9 in.) <sup>c</sup>	330.2 mm (13.0 in.)	591.8 mm (26.2 in.)	517.1 kg (1140 lb)
<p><b>Note:</b> If Y is less than 327.6 mm (12.9 in.), A supplemental spacer is required.  a – Adjust both A and B retainers.  b – Adjust A and remove B retainer.  c – Remove both A and B retainer.</p>						



